transmitting said supercarrier signal, including messaging information, using a first protocol;

transparently demultiplexing said supercarrier signal into a plurality of trib signals;

transmitting said trib signals over said network span using a second protocol;

whereby the messaging information required to maintain said first protocol is included in said trib signals; and

after the transmission over the network span, transparently remultiplexing the trib signals into the supercarrier signal including the messaging information.

5. (Once amended) Apparatus for transporting a supercarrier signal including messaging information, received using a first protocol; over

a network span comprising a plurality of low bit rate network sections for transporting a plurality of trib signals using a second protocol; the apparatus having:

a transparent demultiplexer coupled to receive said supercarrier signal and demultiplex said supercarrier signal into said trib signals for transmission over said network span;

wherein said demultiplexer includes means for inserting into said plurality of trib signals the messaging information required to maintain said first protocol, and

a multiplexer connected between said network span and said network, for transparently remultiplexing the trib signals into the supercarrier signals including the messaging information.

Please delete claims 6 and 9 without prejudice.

10. (Once amended) A transparent demultiplexer comprising:

an input for receiving a supercarrier signal transported using a first protocol;

B3 a plurality of outputs for transmitting a plurality of trib signals using a second protocol;

means for demultiplexing said supercarrier signal into said trib signals; and

means for extracting messaging information, required to recreate the supercarrier signal from the trib signals after transmission, according to said first protocol, from the supercarrier signal and inserting said messaging information into the trib signals.

11. (Once amended) A transparent multiplexer comprising:

an output for transmitting a supercarrier signal using a first protocol;

a plurality of inputs for receiving a plurality of trib signals transported using a second protocol;

means for multiplexing said trib signals into said supercarrier signal; and

means for extracting messaging information from the trib signals and using said messaging information to recreate the supercarrier signal from the trib signals after transmission, according to said first protocol.

15. (Once amended) An optical communication network arranged to support,

B4 using a first protocol, the carriage of a supercarrier signal including messaging information through the optical communication network, the optical communication network further including:

a network span comprising at least one low bit rate network section for transporting a plurality of trib signals using a second protocol;

a transparent demultiplexer connected to said network span for demultiplexing said supercarrier signal into said trib signals; and

wherein said demultiplexer includes means for inserting into said plurality of trib signals the messaging information required to recreate the supercarrier signal from the trib signals after transmission, according to said first protocol.

Add new claims 18 – 21 as follows:

18. (New) A transparent demultiplexer comprising:

an input for receiving a supercarrier signal transported using a first protocol;

a plurality of outputs for transmitting a plurality of trib signals using a second protocol;

a demultiplexer for demultiplexing said supercarrier signal into said trib signals; and

an overhead processor for extracting messaging information, required to recreate the supercarrier signal from the trib signals after transmission, according to said first protocol, from the supercarrier signal and inserting said messaging information into the trib signals.

19. (New) A transparent multiplexer comprising:

an output for transmitting a supercarrier signal using a first protocol;

a plurality of inputs for receiving a plurality of trib signals transported using a second protocol;

a multiplexer for multiplexing said trib signals into said supercarrier signal; and

an overhead processor for extracting messaging information from the trib signals and using said messaging information to recreate the supercarrier signal from the received trib signals, according to said first protocol.

20. (New) A component for a transparent demultiplexer comprising software arranged to control the demultiplexer to:

receive a supercarrier signal transported using a first protocol;

transmit a plurality of trib signals using a second protocol;

demultiplex said supercarrier signal into said trib signals; and

extract from the supercarrier signal messaging information, required to recreate the supercarrier signal according to said first protocol, from the trib signals after transmission, and insert said messaging information into the trib signals.

21. (New) A component for a transparent multiplexer comprising software arranged to control the multiplexer to:

transmit a supercarrier signal using a first protocol;

receive a plurality of trib signals transported using a second protocol;

multiplex said trib signals into said supercarrier signal; and

extract messaging information from the trib signals and use said messaging information to recreate the supercarrier signal from the trib signals after transmission, according to said first protocol.